

Advancing Respiratory Protective Device Technology through Breathing Gas Chemical Research -FY13 (927PP02_Pilot)



Objectives

1. Extensive product and research literature review to develop a new start proposal for an external peer review.
2. Devise a test system which enables simulation using constant air flow under a range of physiological conditions
3. Assemble and test a bench scale laboratory test system to measure SCBA and FSR canister chemical performance.
4. Perform baseline testing of existing materials as references for comparing novel material performance

Applicable Standards related activities

- 42 CFR 84 (Subpart H and new subpart O)
- 42 CFR 110 (Subpart I)
- Mine Improvement and New Emergency Response Act of 2006 (MINER Act)

Key Partners

- OMSHR technologists improving mine escape procedures
- NEDU, EBTC technologists performing military equipment testing

Stakeholders

- CCER, CC-SCBA and FSR Respirator Manufacturers
- Miner using these devices

MidYear Accomplishments FY13

- Developed a full proposal reviewing commercial devices, testing standards, and extensive chemical and catalytic research into novel material chemical performance.
- Developed a reasonable testing system and plan after visits to a manufacturer, ISRP conference, and to government testing sites.
- Assembled a test system, verified CO₂ absorbance measurements
- Developed a collaborative project with OMSHR based on mutual interest in new chemical technologies for mine safety equipment.

Outputs

- Proposal for external scientific review
- New start project documents
- Test procedures and Protocols that conform to academic methods of evaluating chemical performance

Outcomes

- Manufacturers eventually incorporate novel materials into new devices that reduce worker discomfort weight burden, and confusion about performance
- Project data is used by NIOSH to incorporate chemical performance measurements into testing procedures

Updated: 18 Apr 2013